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| APPLICATION NO.  | FILING DATE        | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.            | CONFIRMATION NO.       |
|--|--------------------|----------------------|--------------------------------|------------------------|
| 10/598,218   | 08/21/2006         | Steve Bae            | 2060-01                        | 1338                   |
| 53706<br>IPLA P.A.<br>3580 WILSHIRE BLVD.<br>17TH FLOOR<br>LOS ANGELES, CA 90010 | 7590<br>11/12/2008 |                      | EXAMINER<br>VAUGHAN, MICHAEL R |                        |
|  |                    |                      | ART UNIT<br>2431               | PAPER NUMBER           |
|  |                    |                      | MAIL DATE<br>11/12/2008        | DELIVERY MODE<br>PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/598,218

**Applicant(s)**

BAE ET AL.

**Examiner**

MICHAEL R. VAUGHAN

**Art Unit**

2431

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date 8/21/06
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_



### **DETAILED ACTION**

The instant application having Application No. 10/598,218 filed on 8/21/06 is presented for examination by the examiner.

#### ***Priority***

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been received.

#### ***Claim Objections***

Claims 1-5 are objected to because of the following informalities:

As per claim 1, the application module lacks antecedent basis.

As per claim 2, the unchanged function lacks antecedent basis.

As per claim 3, the authorized application module lacks antecedent basis.

As per claim 4, the access space lacks antecedent basis.

Claim 5 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 5 cites the application-based access control method according to claim 4. Claim 4 is directed to an access control method.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 1, the phrase input/output renders the claim indefinite. The *slash* may imply both or the alternative. The claim language should definitely point out whether input and output are both subject to encryption and decryption or rather only one way is necessary. Appropriate correction is required.

Claims 2 and 3 are rejected for at least the above reason being a dependent claim and not overcoming the ground for rejection.

As per claim 4, the phrase encryption/decryption renders the claim indefinite for the same reason as mentioned in the rejection of claim 1 under 35 USC 112, 2nd paragraph. Other problems dealing with the distinction of the subject matter are present in claim 4. In particular, both a hard disk, disk drive, and a VSD drive are listed in the claim. Other than stating there is a hard disk, no other operation is tied to it. It is unclear how the three are independent and distinct. Furthermore, step (g) and step (h) conflict with one another. In step (g) authorization is performed to allow access to the

application module. When step (h) refers back to step (g) it states the condition of whether or not the application module was authorized. So in step (g), determination of something accessing the application module is made but in step (h), authorization on the application module is performed. So it is unclear whether something is gaining access to the application module, or the application module, itself, is gaining access to something. Claim 4, recites the multiple application modules but then refers to the application module. It is unclear which application module is being addressed.

As per claim 5, there seems to be a conflict in the authorization condition concerning the functions. Claim 4 seems to provide the original function when the application module has been authorized (step (h)). Claim 5, seems to contradict this notion by claiming to stop the function if the application module has been authorized. Claim 5 then goes on to claim, performing the operation if the application module is been unauthorized.

Claim 6 is ejected for at least the above reason being a dependent claim and not overcoming the ground for rejection.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 5 and 6 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for performing a function if the application module is authorized, does not reasonably provide enablement for performing a function if the application module is unauthorized. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. The rejection stems from the contradiction found in claim 5 to its parent claim 4. Overcoming that rejection should overcome this rejection as well.

Claim 6 is ejected for at least the above reason being a dependent claim and not overcoming the ground for rejection.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-6 are rejected under 35 U.S.C. 102(e) as being anticipated by USP 7,428,636 to Waldspurger et al., hereinafter Waldspurger.

As per claim 1, Waldspurger teaches an access control system, comprising:  
a Virtual Secure Disk (VSD) image file module occupying a certain space of a hard disk in a file form (col. 2, line 56);

a VSD drive for processing security-sensitive files within the VSD image file module (col. 2, line 55);

an encryption and decryption module for encrypting and decrypting data input/output between the VSD image file module and the VSD drive (col. 3, lines 52-55);

a VSD file system module for allowing an operating system to recognize the VSD drive as a separate disk volume at a time of access to the security-sensitive files within the VSD image file module (col. 2, line 56 and col. 8, line 12); and

an access control module for determining access by determining whether an access location is a disk drive or the VSD drive (col. 2, lines 40-44) and the application module has been authorized to access a certain file at a time of access to the file, which is stored on the hard disk, to perform tasks in the application module (col. 10, line 19-22).

As per claim 2, Waldspurger teaches wherein the access control module comprises:

an extended system service table for allowing the operation of a corresponding function to be performed when it is pointed at by a descriptor (col. 9, lines 21-25);



and an extended system table for changing a function, which is requested of the service system table by the application module, to prevent operation of the function, determining whether a space in which a corresponding task is performed is the disk drive or the VSD drive, determining whether access to the corresponding file by the application module has been authorized, and providing the unchanged function to the extended system service table or stopping the operation of the function according to results of the determination (col. 17, lines 15-25). Waldspurger mentions two different ways a function can be changed. First it can be changed by adjusting it to match the virtual addresses that must ultimately address a physical block on a disk. Secondly, Waldspurger teaches that a read operation is changed to a decryption operation to decrypt encrypted data and then the changed back to a read operation to send the decrypted data back to the requestor. The same type of change is performed when a write command is performed when it first must be encrypted before writing the data to the drive. Waldspurger also teaches a variation of the latter type by instituting a change of function when a user/process tries to write to a read only file. The write function is changed to a copy function and the new file is encrypted and written. This occurs when changes are not authorized for the copy protected file.

As per claim 3, Waldspurger teaches wherein the VSD image file module virtually occupies the hard disk so as to allow the operating system to recognize the data as being assigned to a certain space of the hard disk without performing physical assignment for storing the data on the hard disk, so that the authorized application module can physically assign the data to the space (col. 2, lines 53-60).

As per claim 4, Waldspurger teaches an access control method, which is performed by an access control system having a hard disk (col. 5, line 7), a disk drive (col. 2, line 40), a file system module (col. 2, line 56), an application module (col. 11, line 41), a VSD image file module [VM], a VSD drive (col. 2, line 56), an encrypting/decrypting module (col. 3, lines 52-55), a VSD file system module (col. 8, line 12), and a control access module (col. 2, lines 40-44) including an extended system service table (col. 7, lines 21-25) and an extended service table (col. 17, lines 15-25), comprising the steps of:

- (a) authorizing the application modules (col. 11, lines 40-42);
- (b) the application module calling a function from an operating system to access a corresponding file (col. 5, line 45-50 and col. 8, lines 6-10);
- (c) the operating system providing the function to the extended service table (col. 6, lines 39-40);
- (d) changing the function into an arbitrarily designated function to prevent the operation of the function in the extended service table (col. 8, lines 10-15);
- (e) determining whether of the file is the disk drive or the VSD drive in the extended service table (col. 10, lines 20-25);
- (f) returning the arbitrarily designated function to the original function whose operation is possible, and providing the original file to the extended system service table if it is determined that the access space is the disk drive at step (e) (col. 10, lines 15-17 and line 31);

(g) determining whether access to the application module has been authorized if it is determined that the access space is the disk drive at step (e) (col. 11, lines 40-43);

(h) returning the arbitrarily designated function to the original function whose operation is possible, and providing the original function to the extended system service table if it is determined that the application module has been authorized at step (g) (col. 10, lines 35-40); and

(i) stopping the operation of the corresponding function if it is determined that the application module has not been authorized at step (g). Waldspurger teaches that only one VM can read the encrypted data of its area. No other VM can read another's encrypted data because each user chooses his/her own keys. Waldspurger mentions two different ways a function can be changed. First it can be changed by adjusting it to match the virtual addresses that must ultimately address a physical block on a disk. Secondly, Waldspurger teaches that a read operation is changed to a decryption operation to decrypt encrypted data and then the changed back to a read operation to send the decrypted data back to the requestor. The same type of change is performed when a write command is performed when it first must be encrypted before writing the data to the drive. Waldspurger also teaches a variation of the latter type by instituting a change of function when a user/process tries to write to a read only file. The write function is changed to a copy function and the new file is encrypted and written. This occurs when changes are not authorized for the copy protected file.

As per claim 5, Waldspurger teaches if the function is a function requesting a Write operation (col. 11, line 51), the step (e) comprises the steps of:

determining whether the application module has been authorized [each VM encrypted data protected from others];

stopping the operation of the function if it is determined the application module has been authorized (col. 11, lines 40-43); and

the arbitrarily designated function returning to the original function, the operation of which is possible, and being provided to the extended system service table if it is determined that the application module has been unauthorized (col. 10, lines 35-40).

As per claim 6, Waldspurger teaches the step of the encryption and decryption module encrypting and decrypting data that are input and output between the VSD image file module and the VSD drive (col. 3, lines 53-55).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure is listed on the enclosed PTO-892 form.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL R. VAUGHAN whose telephone number is (571)270-7316. The examiner can normally be reached on Monday - Thursday, 7:30am - 5:00pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on 571-272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. R. V./

Examiner, Art Unit 2431

/Syed Zia/

Primary Examiner, Art Unit 2431